

**DIC**  
**Differential Interference Contrast**  
**on LCI510**

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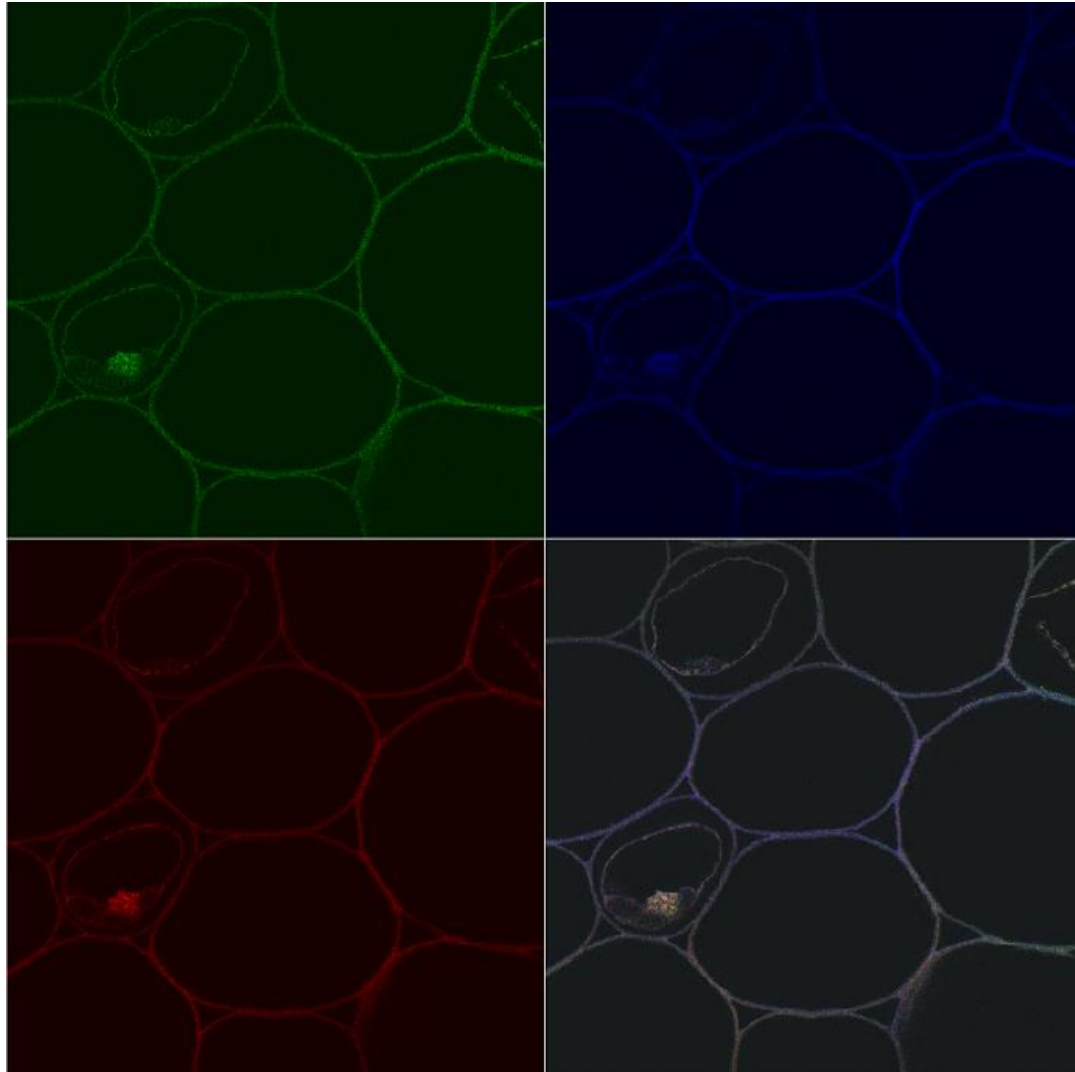
08/14/15

### **DIC – Differential Interference Contrast.**

- **Allows you to view thin transparent specimens at high resolution and high contrast.**
- **Only works with glass. It will not work with plastic.**
- **Sample preparation can affect DIC. Mounting medium. Need difference in Refractive index.**

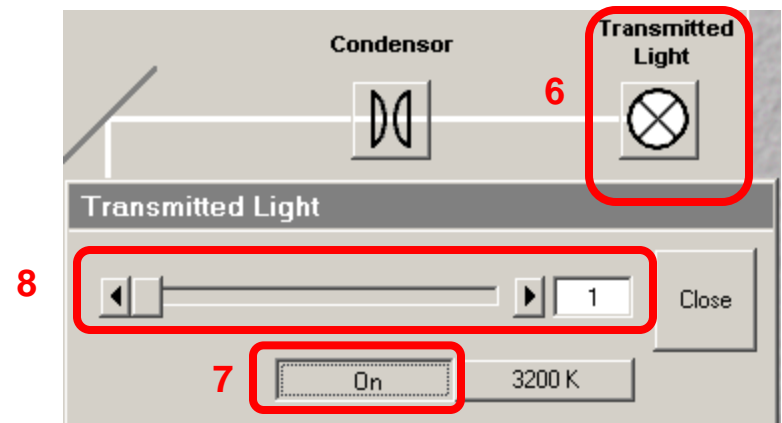
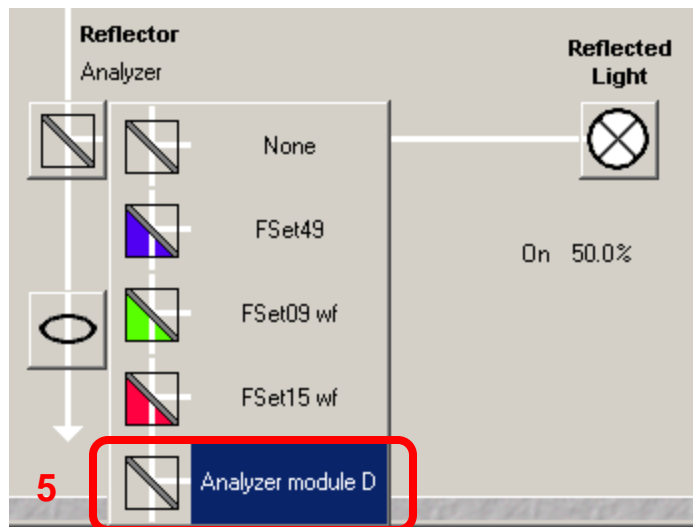
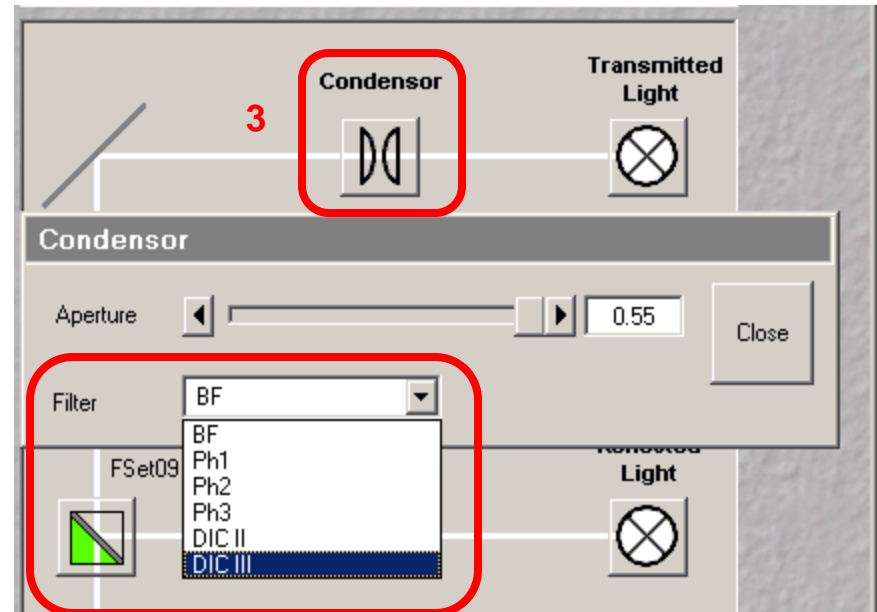
**1. Get a fluorescent image like you normally do.**

*Note: Sometimes it is easier to set up DIC with the 10x dry objective first then go to the oil objective.*




In the Software:

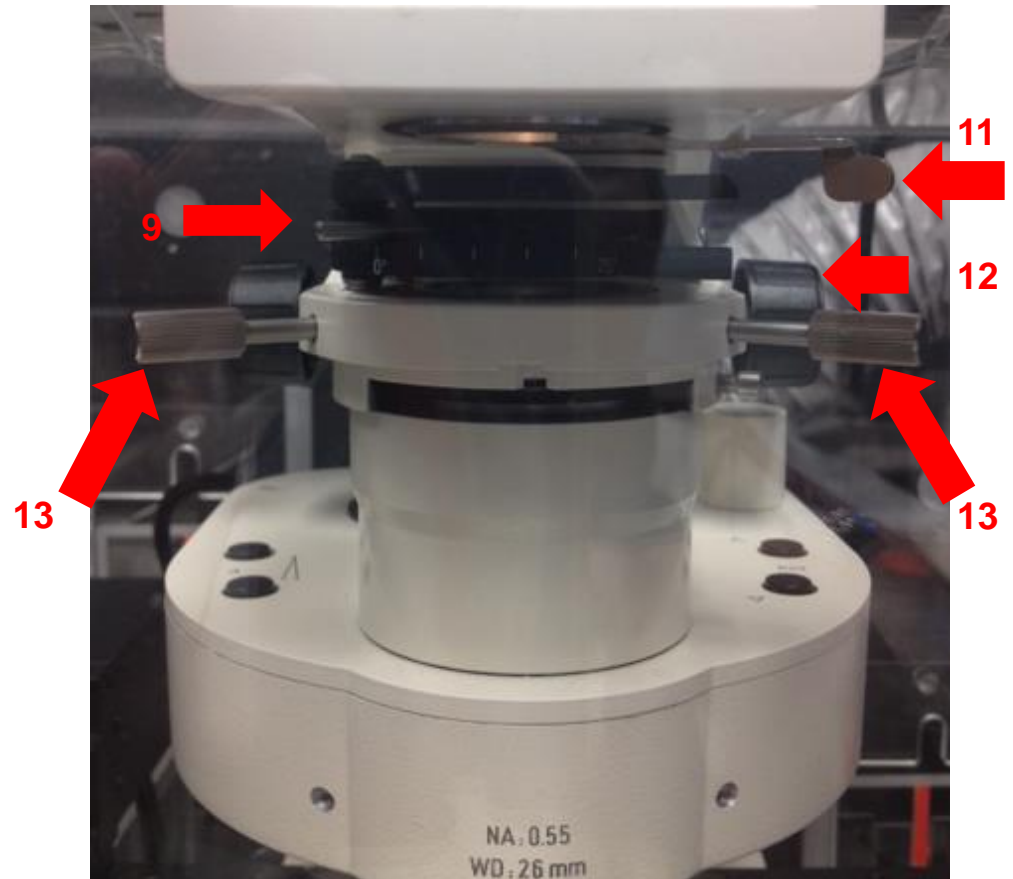
2. Click On VIS.
3. Click Condenser.
4. Select the Condenser Filter. For the 63x objective it is DICIII.
5. Select "Analyzer module D" for Reflector.
6. Click Transmitted Light icon.
7. Click On.
8. Should you need to adjust the light you can do it from the slider or from the microscope. *This location will be shown later.*



**On Microscope:**

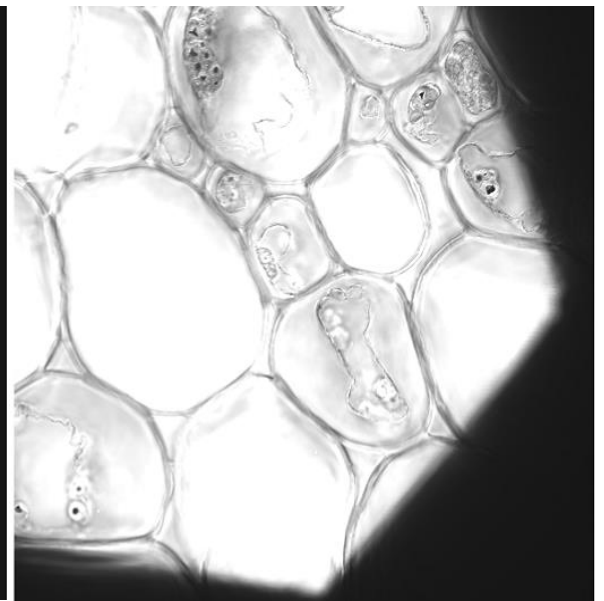
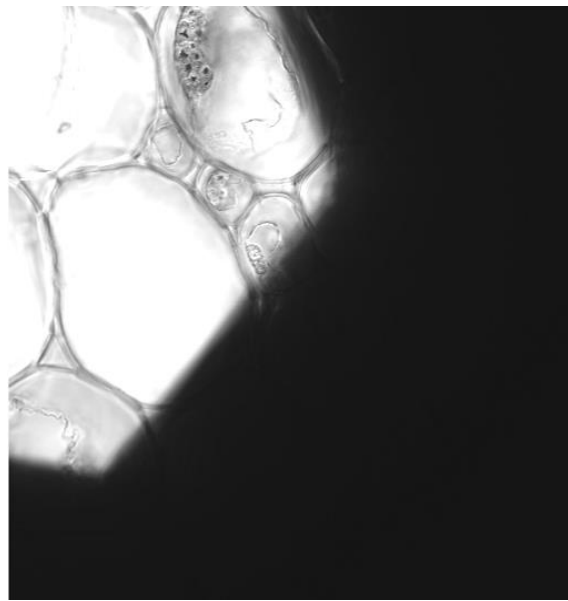
9. Move the silver lever of the analyzer to the left.
10. Adjust light if necessary. *Can also be done from the software as illustrated in Step 8.*
11. Close the field diaphragm by pushing the level away from you until you can see the octagon shape. 
12. Adjust the condenser focus using the condenser focus knob until the octagon is in sharp focus.
13. Using the silver aperture diaphragm knobs on each side to adjust octagon to center. See following slide for illustration of this.

*Steps 12-13 may have to be done in smaller increments and repeated until you can fully see the octagon shape and move it to center. It may also help to do this first with the 10x dry objective then repeat with the 63x oil objective.*



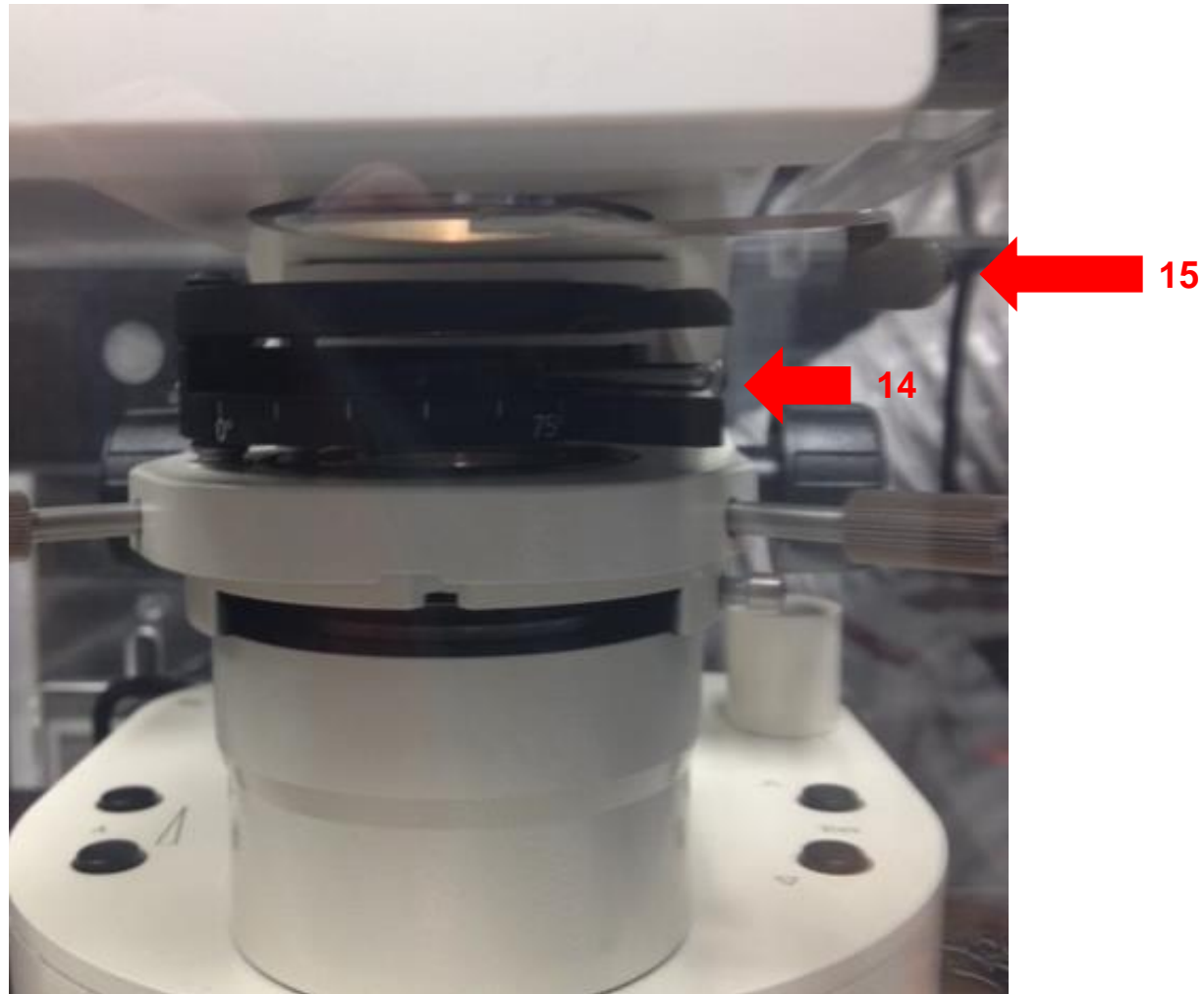
**Step 13: Using the silver aperture diaphragm knobs on each side to adjust octagon to center.**

**Here are 3 images showing the movement of the octagon to the center aligning the condenser.**



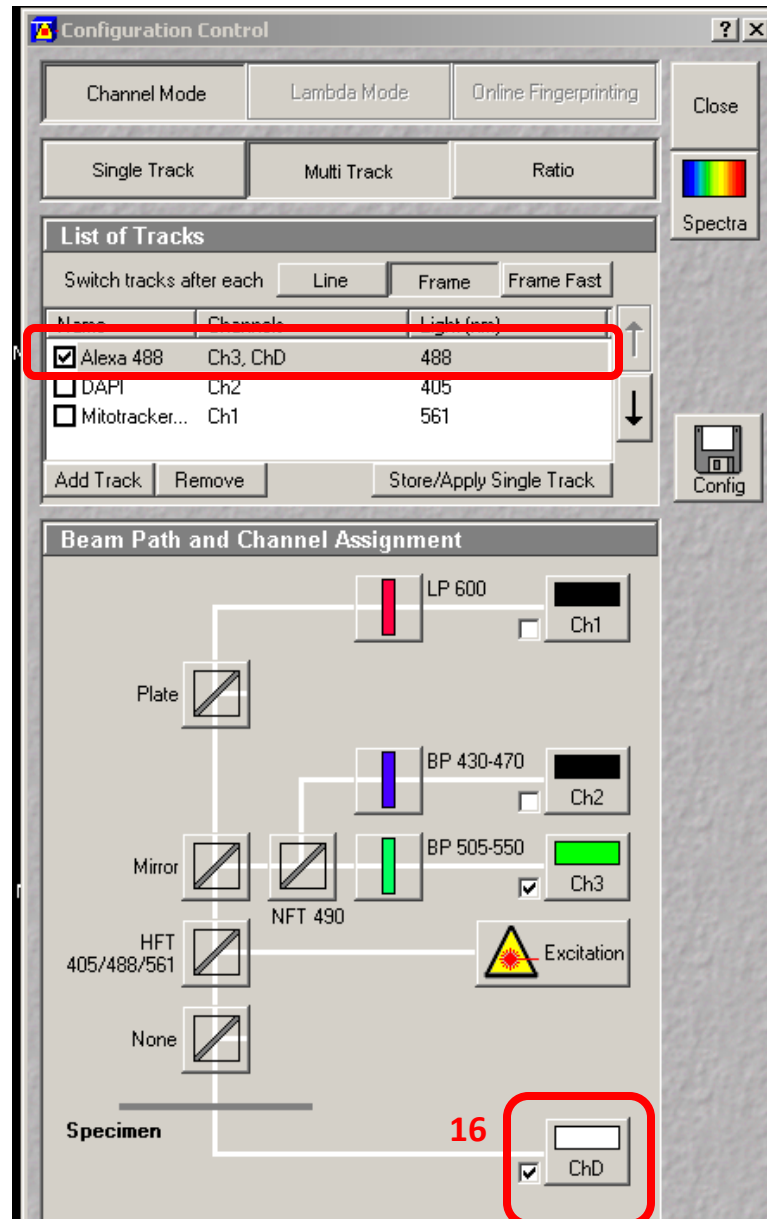
14. In preparation for imaging, return silver lever of the analyzer to the right.
15. Open up the field diaphragm by pulling the lever towards you.

*Note: The right 75° position is for laser scanning. The knob remains on the left for viewing DIC through the eyepiece.*



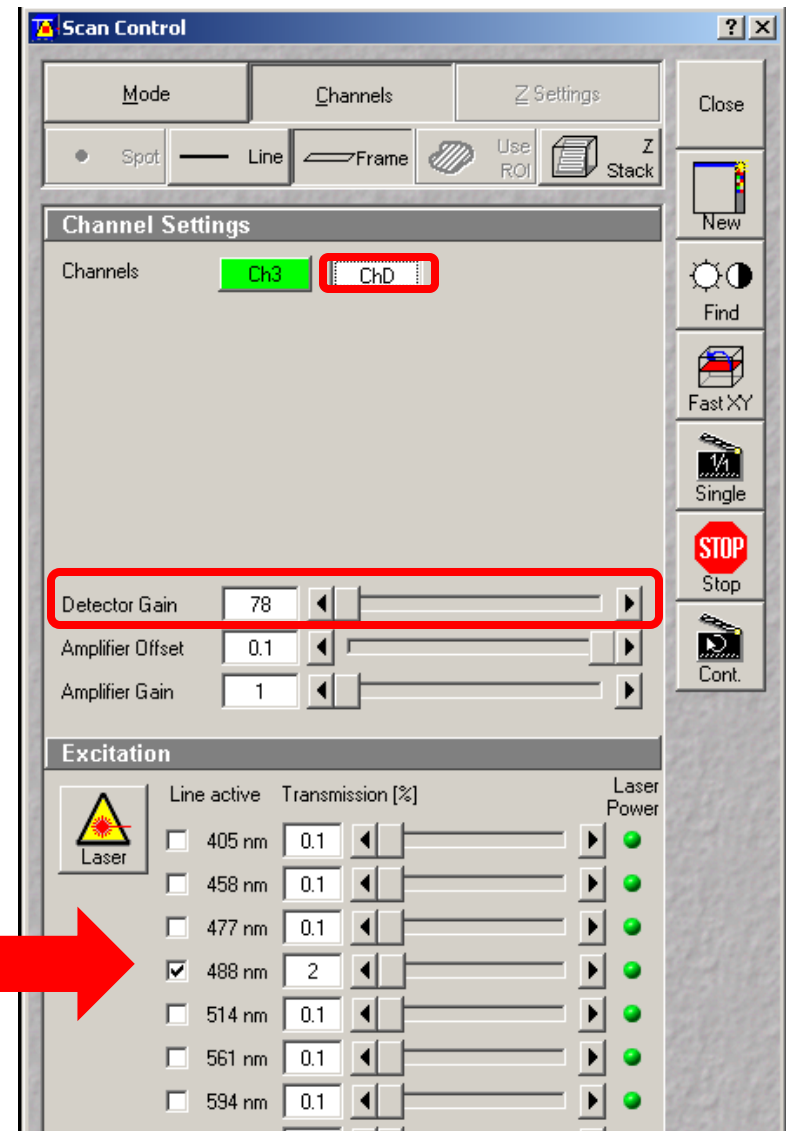
Back on software:  
16. In Configuration Control box: Select the track you wish to attach DIC to and check the ChD box.

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17. While scanning Fast XY, adjust your settings for fluorescence and DIC. For DIC settings select ChD in Scan Control box in order to change the Detector Gain settings.

*Note: DIC uses the same laser as the fluorescent channel you selected. If you change the laser power for one Channel you must change the gain settings of the other Channel.*

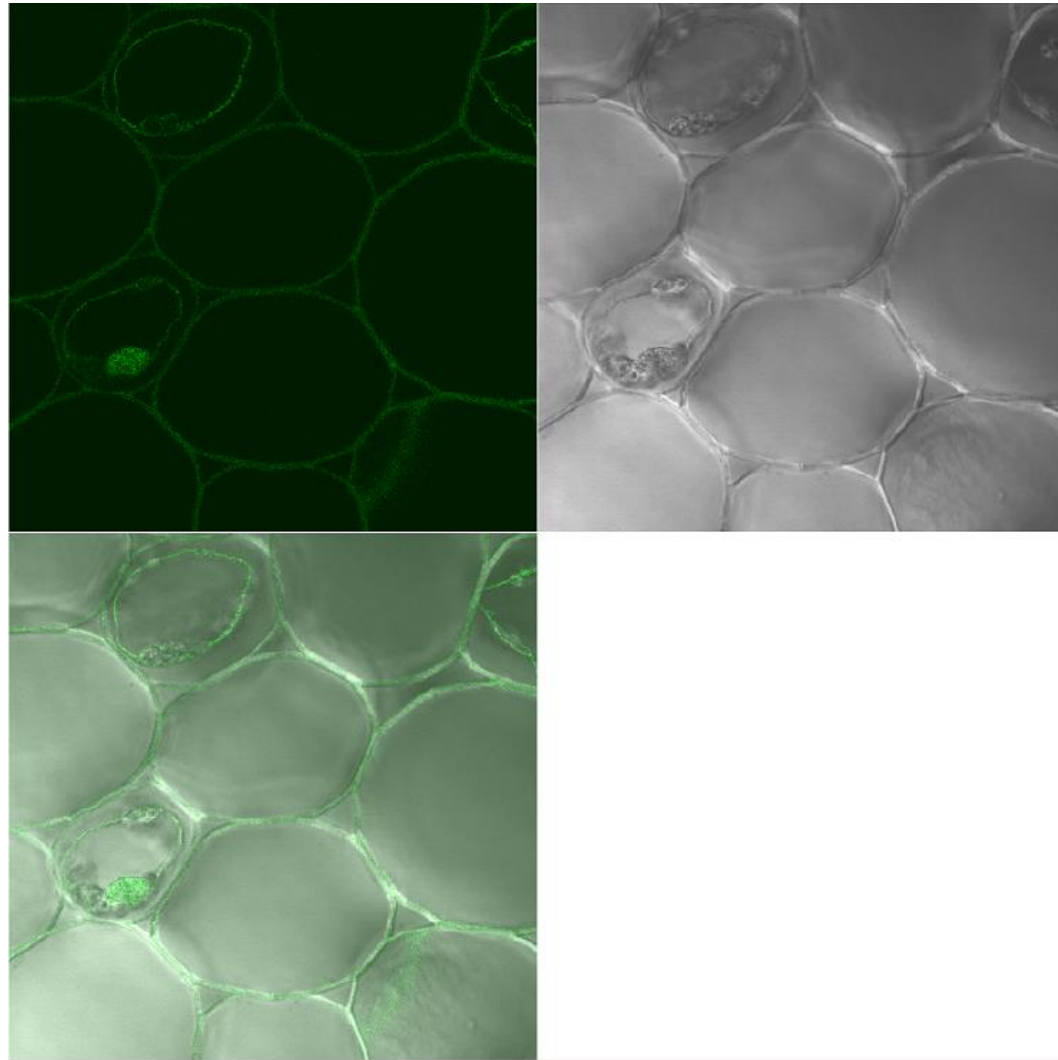


## Adjust DIC slider below the objective

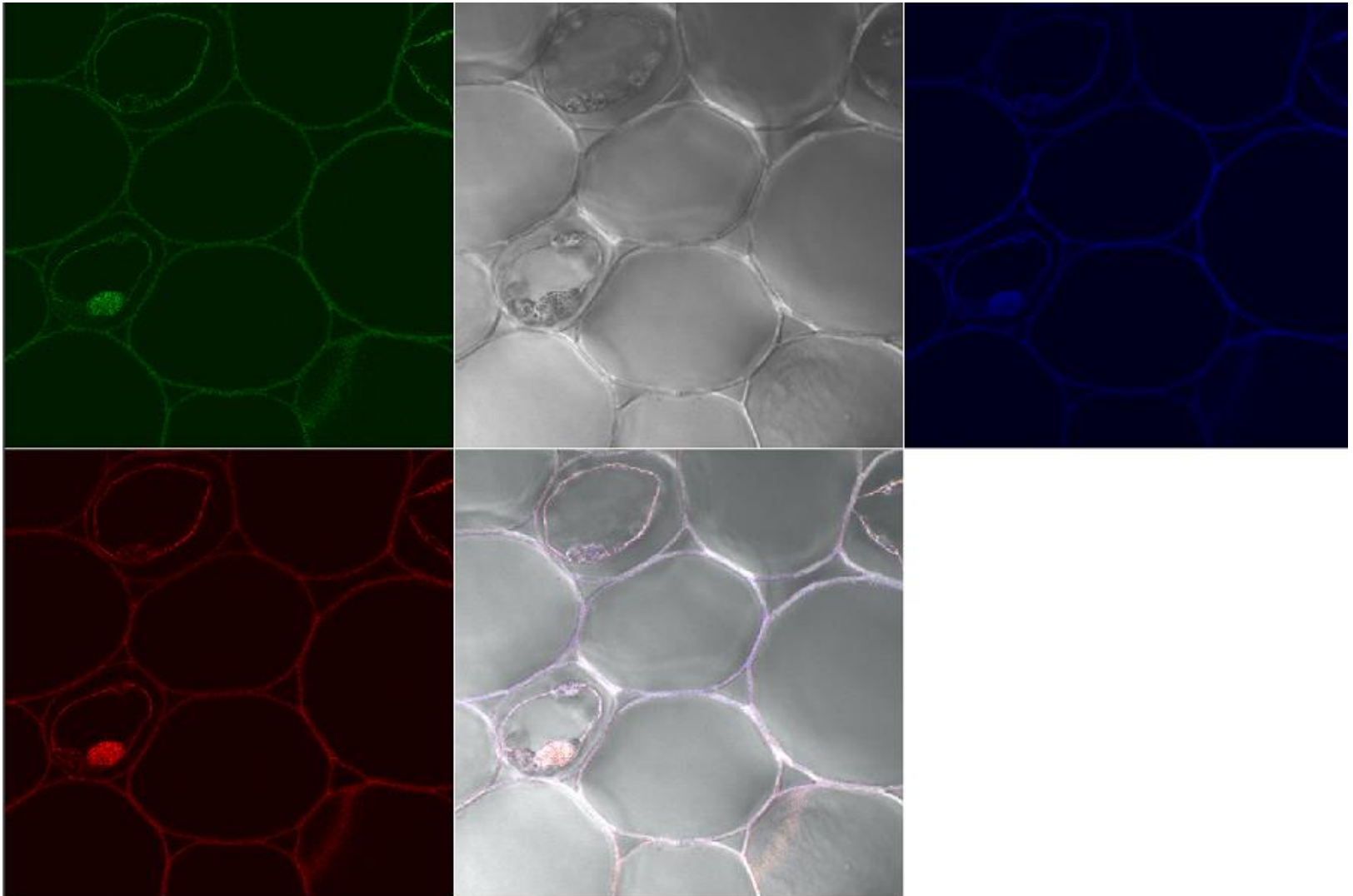
18. You will have to adjust the DIC slider to balance out the illumination. The slider adjustment knob can be found on the microscope beneath the objective. See photo on following slide for DIC Image.



**19. This is what the image looks like after the gain and DIC slider have been adjusted.**



**20. Now take your multi-colored image plus DIC. Below is the final image in split channel view.**



21. DIC images need to be contrast enhanced in the post processing stage. Here we have only selected the DIC – ChD-T2 for contrast adjustment.

